



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-9518; Product Identifier 2015-NM-091-AD; Amendment 39-18989; AD 2017-16-12]

RIN 2120-AA64

Airworthiness Directives; Airbus Airplanes

AGENCY: Federal Aviation Administration (FAA), Department of Transportation (DOT).

ACTION: Final rule.

SUMMARY: We are superseding Airworthiness Directive (AD) 2013-19-09 and AD 2014-25-51, which applied to all Airbus Model A318, A319, A320, and A321 series airplanes. AD 2013-19-09 required replacing Angle of Attack (AOA) sensor conic plates with AOA sensor flat plates. AD 2014-25-51 required revising the airplane flight manual (AFM) to advise the flightcrew of emergency procedures for abnormal Alpha Protection (Alpha Prot). This new AD requires replacing certain AOA sensors; and doing a detailed inspection and a functional heating test for discrepancies on certain AOA sensors, and replacing the affected AOA sensors. This AD was prompted by a report indicating that a Model A321 airplane encountered a blockage of two AOA probes during climb, leading to activation of the Alpha Prot while the Mach number increased. We are issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain other publications listed in this AD as of November 6, 2013 (78 FR 60667, October 2, 2013).

ADDRESSES: For service information identified in this final rule, contact Airbus, Airworthiness Office – EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email account.airworth-eas@airbus.com; Internet <http://www.airbus.com>. You may view this referenced service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9518.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9518; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this AD, the regulatory evaluation, any comments received, and other information. The address for the Docket Office (telephone

800-647-5527) is Docket Management Facility, U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1405; fax 425-227-1149.

SUPPLEMENTARY INFORMATION:

Discussion

We issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 to supersede AD 2013-19-09, Amendment 39-17591 (78 FR 60667, October 2, 2013) (“AD 2013-19-09”), and AD 2014-25-51, Amendment 39-18067 (80 FR 3153, January 22, 2015) (“AD 2014-25-51”). AD 2013-19-09 and AD 2014-25-51 applied to all Airbus Model A318, A319, A320, and A321 series airplanes. The NPRM published in the Federal Register on December 28, 2016 (81 FR 95531). The NPRM was prompted by a report indicating that an Airbus Model A321 airplane encountered a blockage of two AOA probes during climb, leading to activation of the Alpha Prot while the Mach number increased. The NPRM proposed to continue to require replacing AOA sensor conic plates with AOA sensor flat plates and revising the AFM to advise the flight crew of emergency procedures for abnormal Alpha Prot. The NPRM also proposed to continue to require replacing certain AOA sensors; and doing a detailed inspection and a functional heating test for discrepancies on certain AOA sensors, and replacing the affected AOA sensors. We are issuing this AD to prevent a pitch down order due to

abnormal activation of the Alpha Prot. An abnormal Alpha Prot, if not corrected, could result in loss of control of the airplane.

The European Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Union, has issued EASA Airworthiness Directive 2015-0135, dated July 8, 2015 (referred to after this as the Mandatory Continuing Airworthiness Information, or “the MCAI”), to correct an unsafe condition for all Airbus Model A318, A319, A320, and A321 series airplanes. The MCAI states:

An occurrence was reported where an Airbus A321 aeroplane encountered a blockage of two Angle of Attack (AOA) probes during climb, leading to activation of the Alpha Protection (Alpha Prot) while the Mach number increased. The flight crew managed to regain full control and the flight landed uneventfully.

When Alpha Prot is activated due to blocked AOA probes, the flight control laws order a continuous nose down pitch rate that, in a worst case scenario, cannot be stopped with backward sidestick inputs, even in the full backward position. If the Mach number increases during a nose down order, the AOA value of the Alpha Prot will continue to decrease. As a result, the flight control laws will continue to order a nose down pitch rate, even if the speed is above minimum selectable speed, known as VLS.

This condition, if not corrected, could result in loss of control of the airplane.

Investigation results indicated that A320 family airplanes equipped with certain UTC Aerospace (UTAS, formerly known as Goodrich) AOA sensors, or equipped with certain SEXTANT/THOMSON AOA sensors, appear to have a greater susceptibility to adverse environmental conditions than airplanes equipped with the latest Thales AOA sensor, Part Number (P/N) C16291AB, which was designed to improve A320 airplane AOA indication behaviour in heavy rain conditions.

Having determined that replacement of these AOA sensors is necessary to achieve and maintain the required safety level of the airplane, EASA issued AD 2015-0087, retaining the requirements of EASA AD 2012-0236R1 [which corresponds to FAA AD 2013-06-03], [EASA] AD 2013-0022 (partially) [which corresponds to FAA AD 2013-19-09], and [EASA] AD 2014-0266-E [which corresponds to FAA AD 2014-25-51], which were superseded, and requiring modification of the airplanes by replacement of the affected P/N sensors, and, after modification, prohibiting (re-)installation of those P/N AOA sensors. That [EASA] AD also required repetitive detailed visual inspections (DET) and functional heating tests of certain Thales AOA sensors and provided an optional terminating action for those inspections.

Since EASA AD 2015-0087 was issued, based on further analysis results, Airbus issued Operators Information Transmission (OIT) Ref. 999.0015/15 Revision 1, instructing operators to speed up the removal from service of UTAS P/N 0861ED2 AOA sensors.

For the reasons described above, this [EASA] AD retains the requirements of EASA AD 2015-0087, which is superseded, but reduces the compliance times for airplanes with UTAS P/N 0861ED2 AOA sensors installed.

You may examine the MCAI in the AD docket on the Internet at

<http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9518.

Comments

We gave the public the opportunity to participate in developing this AD. The following presents the comments received on the NPRM and the FAA's response to each comment. Air Line Pilots Association, International stated that it supported the NPRM.

Request to Revise Certain Exceptions

Airbus and Virgin America requested that the NPRM be revised to allow airplanes that have utilized FAA Alternative Methods of Compliance (AMOC) ANM-116-13-273R1 for probes having P/N C16291AB to be in compliance with the proposed requirements. Virgin America and Airbus stated that the language in paragraphs (l), (m)(2), (n), and (q) of the proposed AD conflict with the language specified in FAA AMOC ANM-116-13-273R1.

We agree to revise this AD to address the commenters' request. FAA AMOC ANM-116-13-273R1 is limited to certain serial numbers that have passed the inspection and test. We have revised paragraphs (l), (m)(2), (n), and (q) of this AD to clarify the exception in FAA AMOC ANM-116-13-273R1.

Request to Incorporate the Latest Service Information

Airbus requested that the latest service information be used in the AD and credit given for previous actions done before the effective date of this AD.

We agree to incorporate the latest service information in this AD. Accordingly, we have revised paragraph (g)(1) of this AD; the introductory text to paragraph (k) of this AD, and paragraphs (l)(1), (m), and (n) of this AD. For Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015; Airbus Service Bulletin A320-34-1610, Revision 01, dated July 30, 2015; and Airbus Service Bulletin A320-34-1564, Revision 01, dated August 26, 2013; the changes are minor and do not add work to this AD. Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, describes procedures for inspecting, re-identifying, and testing certain AOA sensors, and

does not add work to this AD. We have also revised paragraph (q) of this AD to give credit for previous actions done before the effective date of this AD using earlier versions of service information.

Request for Credit for Previous Actions

Virgin America requested that the FAA include Airbus Service Bulletin A320-34-1452, dated January 29, 2010 (as specified in paragraph (g) of AD 2013-06-03 to inspect and replace the affected probe P/N C16291AA with P/N C16291AB), in paragraph (q), “Credit for Previous Actions,” of the proposed AD. Virgin America stated that these actions have resulted in installing compliant C16291AB probes in the affected positions prior to the effective date of the AD.

We disagree with Virgin America with allowing use of Airbus Service Bulletin A320-34-1452, dated January 29, 2010, for accomplishment of the installation of the probe P/N C16291AB. There are certain probe P/Ns C16291AB having a serial number specified in Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, and these probes may not be installed unless they have been inspected and re-identified, and have passed a functional test, in accordance with the following service information:

- Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012.
- Thales Service Bulletin C16291A-34-007, Revision 03, dated April 10, 2012.
- Thales Service Bulletin C16291A-34-007, Revision 02, dated December 16, 2011.

- Thales Service Bulletin C16291A-34-007, Revision 01, dated December 03, 2009.

Conclusion

We reviewed the available data, including the comments received, and determined that air safety and the public interest require adopting this AD with the changes described previously and minor editorial changes. We have determined that these changes:

- Are consistent with the intent that was proposed in the NPRM for correcting the unsafe condition; and
- Do not add any additional burden upon the public than was already proposed in the NPRM.

We also determined that these changes will not increase the economic burden on any operator or increase the scope of this AD.

Related Service Information under 1 CFR part 51

We have reviewed the following Airbus service information:

- Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015. This service information describes procedures for performing a detailed inspection and a functional heating test for discrepancies on certain AOA sensors, and replacing the affected AOA sensors.

- Airbus Service Bulletin A320-34-1444, Revision 01, dated March 17, 2011.

This service information describes procedures for replacing certain SEXTANT/THOMSON AOA sensors.

- Airbus Service Bulletin A320-34-1564, Revision 01, dated August 26, 2013.

This service information describes procedures for installing AOA sensor plates having a certain part number.

- Airbus Service Bulletin A320-34-1610, Revision 01, dated July 30, 2015. This service information describes procedures for replacing certain UTAS AOA sensors.

We have reviewed the following Thales service information, which describes procedures for inspecting, re-identifying, and testing certain AOA sensors. These documents are distinct due to editorial revisions.

- Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012.
- Thales Service Bulletin C16291A-34-007, Revision 03, dated April 10, 2012.
- Thales Service Bulletin C16291A-34-007, Revision 02, dated December 16, 2011.
- Thales Service Bulletin C16291A-34-007, Revision 01, dated December 03, 2009.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Costs of Compliance

We estimate that this AD affects 959 airplanes of U.S. registry.

We estimate the following costs to comply with this AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Replacement (retained actions from AD 2013-19-09)	8 work-hours X \$85 per hour = \$680	\$0	\$680	\$652,120
Revising the AFM (retained actions from AD 2014-25-51)	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$81,515
Replacement and Inspection (new action)	5 work-hours X \$85 per hour = \$425	The parts cost is unavailable	\$425	\$407,575

We estimate the following costs to do any necessary replacements that would be required based on the results of the inspection. We have no way of determining the number of aircraft that might need these replacements:

On-condition costs

Action	Labor cost	Parts cost	Cost per product
Replacement	5 work-hours X \$85 per hour = \$425	The parts cost is unavailable	\$425

According to the manufacturer, some of the costs of this AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. "Subtitle VII: Aviation Programs," describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in "Subtitle VII, Part A, Subpart III, Section 44701: General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

This AD is issued in accordance with authority delegated by the Executive Director, Aircraft Certification Service, as authorized by FAA Order 8000.51C. In accordance with that order, issuance of ADs is normally a function of the Compliance and Airworthiness Division, but during this transition period, the Executive Director has delegated the authority to issue ADs applicable to transport category airplanes to the Director of the System Oversight Division.

Regulatory Findings

We determined that this AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on

the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

1. Is not a “significant regulatory action” under Executive Order 12866;
2. Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979);
3. Will not affect intrastate aviation in Alaska; and
4. Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

Adoption of the Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2013-19-09, Amendment 39-17591 (78 FR 60667, October 2, 2013); and AD 2014-25-51, Amendment 39-18067 (80 FR 3153, January 22, 2015); and adding the following new AD:

2017-16-12 Airbus: Amendment 39-18989; Docket No. FAA-2016-9518; Product Identifier 2015-NM-091-AD.

(a) Effective Date

This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

(1) This AD replaces AD 2013-19-09, Amendment 39-17591 (78 FR 60667, October 2, 2013) (“AD 2013-19-09”); and AD 2014-25-51, Amendment 39-18067 (80 FR 3153, January 22, 2015) (“AD 2014-25-51”).

(2) This AD affects AD 2013-06-03, Amendment 39-17399 (78 FR 19085, March 29, 2013) (“AD 2013-06-03”).

(c) Applicability

This AD applies to the Airbus airplanes listed in paragraphs (c)(1) through (c)(4) of this AD, certificated in any category, all manufacturer serial numbers.

(1) Airbus Model A318-111, -112, -121, and -122 airplanes.

(2) Airbus Model A319-111, -112, -113, -114, -115, -131, -132, and -133 airplanes.

(3) Airbus Model A320-211, -212, -214, -231, -232, and -233 airplanes.

(4) Airbus Model A321-111, -112, -131, -211, -212, -213, -231, and -232 airplanes.

(d) Subject

Air Transport Association (ATA) of America Code 34, Navigation.

(e) Reason

This AD was prompted by a report indicating that an Airbus Model A321 airplane encountered a blockage of two Angle of Attack (AOA) probes during climb, leading to activation of the Alpha Protection (Alpha Prot) while the Mach number increased. We are issuing this AD to prevent a pitch down order due to abnormal activation of the Alpha Prot. An abnormal Alpha Prot, if not corrected, could result in loss of control of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained New Flat Plate Installation, with Removed Post-Installation Requirement, Specific Delegation Approval Language, and New Service Information

This paragraph restates the requirements of paragraph (j) of AD 2013-19-09, with a removed post-installation requirement, specific delegation approval language, and revised service information. Within 5 months after November 6, 2013 (the effective date of AD 2013-19-09), remove all AOA sensor conic plates having part number (P/N) F3411060200000 or P/N F3411060900000, and install AOA sensor flat plates having P/Ns specified in paragraph (g)(1) or (g)(2) of this AD, except as specified in paragraph (h) of this AD. Install the AOA sensor plates in accordance with the applicable method specified in paragraph (g)(1) or (g)(2) of this AD.

(1) Install P/N D3411013520200 in accordance with the Accomplishment Instructions of Airbus Mandatory Service Bulletin A320-34-1564, including Appendix 01, dated January 25, 2013, or Airbus Service Bulletin A320-34-1564,

Revision 01, dated August 26, 2013. As of the effective date of this AD, only Airbus Service Bulletin A320-34-1564, Revision 01, dated August 26, 2013, may be used for accomplishment of the actions required by this paragraph.

(2) Install P/N D3411007620000 or P/N D3411013520000, using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA).

(h) Retained Exception, with No Changes

This paragraph restates the exception provided by paragraph (k) of AD 2013-19-09, with no changes. An airplane on which Airbus modification 154863 (installation of AOA sensor flat plate) and modification 154864 (coating protection) have been embodied in production is not affected by the requirements of paragraph (g) of this AD, provided that, since first flight, no AOA sensor conic plate having P/N F3411060200000 or P/N F3411060900000 has been installed on that airplane.

(i) Retained Parts Installation Prohibition, with No Changes

This paragraph restates the requirements of paragraph (m) of AD 2013-19-09, with no changes.

(1) For any airplane that has AOA sensor flat plates installed: As of November 6, 2013 (the effective date of AD 2013-19-09), do not install any AOA sensor conic plate having P/N F3411060200000 or P/N F3411060900000, and do not use any AOA protection cover having P/N 98D34203003000.

(2) For any airplane that has AOA sensor conic plates installed: As of November 6, 2013 (the effective date of AD 2013-19-09), after modification of the airplane as required by paragraph (g) of this AD, do not install any AOA sensor conic plate having P/N F3411060200000 or P/N F3411060900000, and do not use any AOA protection cover having P/N 98D34203003000.

(j) Retained Revision of Airplane Flight Manual (AFM), with No Changes

This paragraph restates the requirements of paragraph (g) of AD 2014-25-51, with no changes. Within 2 days after February 6, 2015 (the effective date of AD 2014-25-51), revise the AFM to incorporate procedures to address undue activation of Alpha Prot by inserting the text specified in figure 1 to paragraph (j) of this AD into the Emergency Procedures section of the applicable AFM, to advise the flight crew of emergency procedures for abnormal Alpha Prot. This may be accomplished by inserting a copy of this AD into the AFM. When a statement identical to the text specified in figure 1 to paragraph (j) of this AD is included in the general revisions of the AFM, the general revisions may be inserted in the AFM, and the text specified in figure 1 to paragraph (j) of this AD may be removed.

Figure 1 to paragraph (j) of this AD - AFM Procedure

- At any time, with a speed above VLS, if the aircraft goes to a continuous nose down pitch rate that cannot be stopped with backward sidestick inputs, immediately:
Keep on one ADR.
Turn off two ADRs.
- If the Alpha Max strip (red) hides completely the Alpha Prot strip (black and amber) in a stabilized wings-level flight path (without an increase in load factor):
Keep on one ADR.
Turn off two ADRs.
In case of dispatch with one ADR inoperative, switch only one ADR to OFF.

CAUTION RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

Consider using the Flight Path Vector (FPV).

- If the Alpha Prot strip (black and amber) rapidly moves by more than 30 kt during flight maneuvers (with an increase in load factor), with AP ON and speed brakes retracted:
Keep on one ADR.
Turn off two ADRs.
In case of dispatch with one ADR inoperative, switch only one ADR to OFF.

CAUTION RISK OF ERRONEOUS DISPLAY OF THE VSW STRIP (RED AND BLACK)

Consider using the Flight Path Vector (FPV).

(k) New Requirement of this AD: Replacement of Certain UTAS (formerly Goodrich) AOA Sensors

For airplanes on which any UTAS AOA sensor, P/N 0861ED or P/N 0861ED2, is installed: Within the applicable compliance times specified in paragraphs (k)(1), (k)(2), (k)(3), and (k)(4) of this AD, replace the affected Captain and First Officer AOA sensors with Thales AOA sensors, P/N C16291AB, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-34-1610, Revision 01, dated July 30, 2015.

(1) For Model A318 and A321 series airplanes on which any UTAS AOA sensor, P/N 0861ED, is installed: Replace within 7 months after the effective date of this AD.

(2) For Model A319 and A320 series airplanes on which any UTAS AOA sensor, P/N 0861ED, is installed: Replace within 22 months after the effective date of this AD.

(3) For Model A318 and A321 series airplanes on which any UTAS AOA sensor, P/N 0861ED2, is installed: Replace within 4 months after the effective date of this AD.

(4) For Model A319 and A320 series airplanes on which any UTAS AOA sensor, P/N 0861ED2, is installed: Replace within 7 months after the effective date of this AD.

(l) New Requirement of this AD: Replacement of Certain SEXTANT/THOMSON AOA Sensors

(1) For airplanes on which any SEXTANT/THOMSON AOA sensor, P/N 45150320 or P/N 16990568, is installed: Within the applicable compliance time specified in paragraphs (l)(1)(i) or (l)(1)(ii) of this AD, replace each SEXTANT/THOMSON AOA sensor, P/N 45150320 and P/N 16990568, with a Thales AOA sensor, P/N C16291AB, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-34-1444, Revision 01, dated March 17, 2011; except AOA sensor probes P/N C16291AB having a serial number specified in Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, may not be installed unless the AOA probe sensors have been inspected and re-identified, and have passed a functional test, in accordance with the Thales service information specified in paragraphs (l)(2)(i), (l)(2)(ii), (l)(2)(iii), or (l)(2)(iv) of this AD.

(i) For Model A318 and A321 series airplanes on which any SEXTANT/THOMSON AOA sensor, P/N 45150320 or P/N 16990568, is installed:
Replace within 7 months after the effective date of this AD.

(ii) For Model A319 and A320 series airplanes on which any SEXTANT/THOMSON AOA sensor, P/N 45150320 or P/N 16990568, is installed:
Replace within 22 months after the effective date of this AD.

(2) As specified in paragraph (1)(1) of this AD, use the following Thales service information specified in paragraphs (1)(2)(i), (1)(2)(ii), (1)(2)(iii), or (1)(2)(iv) of this AD.

(i) Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012.

(ii) Thales Service Bulletin C16291A-34-007, Revision 03, dated April 10, 2012.

(iii) Thales Service Bulletin C16291A-34-007, Revision 02, dated December 16, 2011.

(iv) Thales Service Bulletin C16291A-34-007, Revision 01, dated December 03, 2009.

(m) New Requirement of this AD: Functional Heating Test, and Corrective Action for Certain AOA Sensors

For an airplane on which any Thales AOA sensor, P/N C16291AA, is installed:
Before exceeding 5,200 flight hours accumulated by each affected Thales AOA sensor since its first installation on an airplane, or within 6 months after the effective date of this AD, whichever occurs later, do a functional heating test of each AOA sensor, P/N C16291AA, to determine the maximum current (Imax) value, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-34-1415, Revision 04,

dated July 30, 2015. If, during any functional heating test, any I_{max} value is below the flow chart value as specified in Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015, before further flight, replace each discrepant AOA sensor with a sensor identified in paragraph (m)(1) or (m)(2) of this AD, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015. Repeat the functional heating test thereafter at intervals not to exceed 2,000 flight hours.

(1) Replace with a Thales AOA sensor, P/N C16291AA, that has passed a functional heating test as specified in the Accomplishment Instructions of Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015.

(2) Replace with a Thales AOA sensor, P/N C16291AB, except AOA sensor probes P/N C16291AB having a serial number specified in Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, may not be installed unless the AOA probe sensors have been inspected and re-identified, and have passed a functional test, in accordance with the Thales service information specified in paragraphs (l)(2)(i), (l)(2)(ii), (l)(2)(iii), or (l)(2)(iv) of this AD.

(n) Optional Terminating Action

Modification of an airplane by replacing each Thales P/N C16291AA AOA sensor with a Thales P/N C16291AB AOA sensor, in accordance with the Accomplishment Instructions of Airbus Service Bulletin A320-34-1444, Revision 01, dated March 17, 2011, terminates the repetitive functional heating tests required in paragraph (m) of this AD for that airplane; except AOA sensor probes P/N C16291AB

having a serial number specified in Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, may not be installed, unless the AOA probe sensors have been inspected and re-identified, and have passed a functional test, in accordance with the Thales service information specified in paragraphs (l)(2)(i), (l)(2)(ii), (l)(2)(iii), or (l)(2)(iv) of this AD.

(o) New Provisions of this AD: Airplanes Not Affected

An airplane with Airbus modification 150006 (installation of Thales P/N C16291AB AOA sensors), but without modification 26934 (installation of UTAS P/N 0861ED AOA sensors) embodied in production, is not affected by the requirements of paragraphs (k), (l), and (m) of this AD, provided it is determined that no AOA sensor having SEXTANT/THOMSON P/N 45150320 or 16990568, or UTAS P/N 0861ED or 0861ED2, has been installed on that airplane since its date of manufacture.

(p) New Requirement of this AD: Parts Installation Prohibitions

(1) As of the effective date of this AD: For an airplane on which only Thales AOA sensors, P/N C16291AB, are installed, do not install a Thales AOA sensor, P/N C16291AA, on that airplane. This parts installation prohibition terminates the requirements of paragraph (i)(1) of AD 2013-06-03 for the airplanes identified in this paragraph.

(2) As of the effective date of this AD: For an airplane on which any combination of Thales AOA sensors, P/N C16291AA and Thales P/N C16291AB, is installed, do not install any SEXTANT/THOMSON AOA sensor, P/N 45150320 or 16990568, or UTAS AOA sensor, P/N 0861ED or 0861ED2, on that airplane.

(3) After modification of an airplane as required by paragraph (k) of this AD, do not install any AOA sensor with a part number specified in paragraphs (p)(3)(i) and (p)(3)(ii) of this AD on that airplane, with the exception that installation of a UTAS P/N 0861ED AOA sensor is allowed in the standby position of that airplane.

(i) SEXTANT/THOMSON AOA sensors, P/N 45150320 and P/N 16990568.

(ii) UTAS AOA sensors, P/N 0861ED and P/N 0861ED2.

(q) Credit for Previous Actions

(1) This paragraph provides credit for the actions required by paragraph (k) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-34-1610, dated March 31, 2015.

(2) This paragraph provides credit for the actions required by paragraph (l) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-34-1444, dated October 7, 2009; except AOA sensor probes P/N C16291AB having a serial number specified in Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012, may not be installed unless the AOA probe sensors have been inspected and re-identified, and have passed a functional test, using the Thales service information specified in paragraphs (l)(2)(i), (l)(2)(ii), (l)(2)(iii), or (l)(2)(iv) of this AD.

(3) This paragraph provides credit for the actions required by paragraph (m) of this AD, if those actions were performed before the effective date of this AD using Airbus Service Bulletin A320-34-1415, Revision 03, July 8, 2010.

(r) Acceptable Parts

Installation of a version (part number) of an AOA sensor approved after the effective date of this AD is an approved method of compliance with the requirements of paragraph (k), (l), or (m) of this AD, as applicable, provided the requirements specified in paragraphs (r)(1) and (r)(2) of this AD are met.

(1) The version (part number) must be approved by the Manager, International Section, Transport Standards Branch, FAA; or EASA; or Airbus's EASA DOA.

(2) The installation must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or EASA; or Airbus's EASA DOA.

(s) Other FAA AD Provisions

The following provisions also apply to this AD:

(1) Alternative Methods of Compliance (AMOCs): The Manager, International Section, Transport Standards Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the International Branch, send it to the attention of the person identified in paragraph (u)(2) of this AD. Information may be emailed to: 9-ANM-116-AMOC-REQUESTS@faa.gov.

(i) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(ii) AMOCs approved previously for AD 2013-19-09 are approved as AMOCs for the corresponding provisions of paragraphs (g), (h), (i), and (t)(1) of this AD.

(iii) AMOCs approved previously for AD 2014-25-51 are approved as AMOCs for the corresponding provisions of paragraph (j) of this AD.

(2) Contacting the Manufacturer: As of the effective date of this AD, for any requirement in this AD to obtain corrective actions from a manufacturer, the action must be accomplished using a method approved by the Manager, International Section, Transport Standards Branch, FAA; or the European Aviation Safety Agency (EASA); or Airbus's EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(t) Retained Provisions for Special Flight Permits

(1) For the requirements of paragraphs (g), (h), and (i) of this AD: Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the airplane can be modified (if the operator elects to do so), provided Airbus A318/A319/A320/A321 TR TR286, Issue 1.0, dated December 17, 2012, has been inserted into the Emergency Procedures of the Airbus A318/A319/A320/A321 AFM.

(2) For the requirements of paragraphs (j) of this AD: Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the airplane to a location where the airplane can be modified (if the operator elects to do so), provided the revision required by paragraph (j) of this AD has been done.

(u) Related Information

(1) Refer to Mandatory Continuing Airworthiness Information (MCAI) EASA Airworthiness Directive 2015-0135, dated July 8, 2015, for related information. This MCAI may be found in the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9518.

(2) For more information about this AD, contact Sanjay Ralhan, Aerospace Engineer, International Section, Transport Standards Branch, FAA, 1601 Lind Avenue SW., Renton, WA 98057-3356; telephone 425-227-1405; fax 425-227-1149.

(3) Service information identified in this AD that is not incorporated by reference is available at the addresses specified in paragraphs (v)(5) and (v)(6) of this AD.

(v) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(3) The following service information was approved for IBR on [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

- (i) Airbus Service Bulletin A320-34-1415, Revision 04, dated July 30, 2015.
- (ii) Airbus Service Bulletin A320-34-1444, Revision 01, dated March 17, 2011.
- (iii) Airbus Service Bulletin A320-34-1564, Revision 01, dated August 26, 2013.
- (iv) Airbus Service Bulletin A320-34-1610, Revision 01, dated July 30, 2015.
- (v) Thales Service Bulletin C16291A-34-007, Revision 04, dated October 11, 2012.
- (vi) Thales Service Bulletin C16291A-34-007, Revision 03, dated April 10, 2012.
- (vii) Thales Service Bulletin C16291A-34-007, Revision 02, dated December 16, 2011.
- (viii) Thales Service Bulletin C16291A-34-007, Revision 01, dated December 03, 2009.

(4) The following service information was approved for IBR on November 6, 2013, Amendment 39-17591 (78 FR 60667, October 2, 2013).

- (i) Airbus Mandatory Service Bulletin A320-34-1564, including Appendix 01, dated January 25, 2013.
- (ii) Reserved.

(5) For service information identified in this AD, contact Airbus, Airworthiness Office – EIAS, 1 Rond Point Maurice Bellonte, 31707 Blagnac Cedex, France; telephone +33 5 61 93 36 96; fax +33 5 61 93 44 51; email account.airworth-eas@airbus.com; Internet <http://www.airbus.com>.

(6) You may view this service information at the FAA, Transport Standards Branch, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

(7) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to:

<http://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued in Renton, Washington, on August 2, 2017.

Jeffrey E. Duven,
Director,
System Oversight Division,
Aircraft Certification Service.

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